



Hearing Conservation Program

Purpose & Scope

The purpose of this program is to establish guidelines for Fayetteville State University employees who may encounter workplace hazards that require hearing protection as prescribed in the Occupational Safety and Health Administration's (OSHA's) Occupational Noise Exposure Standard – 29 CFR 1910.95. This program applies to all employees that must wear hearing protection.

Program Statement

It is the responsibility of Fayetteville State University to protect students, faculty, and staff from anticipated hazards. This program establishes a minimum standard for the use of hearing protection within Fayetteville State University to ensure compliance with OSHA standards.

Roles & Responsibilities

EHS Officer/Professional is responsible for the following:

- Ensures that a written program is in place
- Reviews the program periodically and monitors to ensure compliance with this program
- Coordinates training for applicable employees on hearing conservation training
- Oversees the effectiveness of the program
- Conducts or assists with periodic job hazard assessments as needed
- Provides technical assistance on proper care, use, selection, maintenance, and disposal of hearing protection

Manager/Supervisor is responsible for the following:

- Ensures that employees comply with the guidelines established by this program
- Ensures that designated employees complete required training prior to wearing hearing protection
- Conducts or assists with periodic job hazard assessments
- Provides appropriate hearing protection as determined by the hazard assessment
- Shows employees how to wear, don, and doff provided hearing protection
- Notifies the EHS Officer / Professional when new hazards are introduced that may impact hearing protection requirements

Employees are responsible for the following:

- Complies with this program
- Completes required training
- Appropriately uses, maintains, and disposes of hearing protection
- Notifies the supervisor/manager of concerns or problems with assigned hearing protection

Contractors are responsible for the following:

- All contractors hired at FSU shall have their own written Hearing Conservation program that fulfills all regulatory requirements or follows the guidance in this program

Implementation

Exposure Monitoring

An ongoing noise exposure evaluation program is required under 29 CFR 1910.95 – Occupational Noise Exposure when information indicates that any employee’s exposure may equal or exceed an 8-hour time-weighted average of 85 dBA. Monitoring will be repeated whenever a change in production, process, equipment, or control increases noise exposure to the extent that:

- Additional employees may be exposed at or above the 85-dBA action level.
- The attenuation provided by the hearing protectors being used by the employees may be rendered inadequate. Noise exposure monitoring and a complete survey of the university will be completed annually. (See Attachment 3)

If it is determined through noise monitoring that FSU faculty and/or staff are exposed at or above 85 dBA at an 8-hour TWA, then FSU will provide:

- Annual hearing tests
- Annual hearing conservation training
- Hearing protection
- Posting the 29 CFR 1910.95 – Occupational Noise Exposure Standard
- Notification of the results of the noise exposure survey and/or monitoring

If the noise level exceeds 85 dBA, the standard requires that engineering and administrative control measures must be investigated, evaluated and, where feasible, utilized to reduce employee exposure. It is important that any measure investigated, utilized or evaluated to reduce the noise levels be documented. Hearing protection is mandatory for employees exposed at or above 85 dBA at an 8-hour TWA.

It is important to note that for work shifts in excess of 8 hours, the 85 dBA TWA is reduced. For example, exposures in excess of 83.4 dBA for a 10-hour work shift and exposures in excess of 82.1 dBA for a 12-hour work shift necessitate inclusion in a hearing conservation program.

Employee Notification of the Results of the Noise Exposure Monitoring

FSU Faculty and staff will be notified of the results of the noise exposure monitoring (See Attachment 3). Records will be kept for two years.

Engineering Controls to Reduce Noise

- Contact manufacturer for noise abatement suggestions
- The purchase of quieter equipment or routine maintenance to reduce noise levels
- Reduction of noise level at the source
 1. Substitution of materials (i.e. plastic for metal)
 2. Dampening or reducing surface vibration
 3. Increasing the distance between the employee and the noise source

4. Enclosures or sound insulation material
5. Relocation of job tasks which may be completed out of high noise areas

Administrative Controls to Reduce Noise

When engineering measures alone cannot reduce the noise below 85 dBA, administrative methods may be used to minimize FSU faculty / staff exposure such as worker rotation from high noise levels to quiet areas or limiting the length of time a faculty / staff member can work when rotation is not possible.

Information & Training

Hearing Conservation Training is required annually for all employees with noise exposure of 85 dBA TWA or greater. The goal of the training is to orient employees to the purpose of hearing protection, the use of hearing protection and university policy regarding the hearing conservation program. The following topics will be included in the employee training of the hearing conservation program:

- The effects of noise on hearing
 1. Hearing loss can take many years to occur, and the employee may not realize that gradual hearing loss is taking place. The loss occurs without any pain and cannot be corrected by any known medical or surgical treatment. A good rule of thumb to remember is that if you must raise your voice at a distance of three feet, you are in an area with a possible hazardous noise level. Repeated unprotected noise exposure will cause a permanent hearing loss. The hearing conservation program has been established to ensure that if you ever have a standard threshold shift, your noise exposure can be lessened by using engineering or administrative controls or more effective hearing protection. Thus, the problem can be controlled.
- The purpose of the annual hearing test and an explanation of the test procedures
 1. The purpose of the annual hearing test is to monitor your hearing. Periodic audiometric testing provides an “early warning” of hearing disability. Factors such as noisy hobbies, ear infections, diseases of the ear, as well as general illness may also cause hearing loss. All employees’ hearing will be checked upon employment and once a year thereafter. You will be notified of any changes in your hearing.
- The purpose of hearing protections, instructions on selection, the advantages, disadvantages, fitting use and care.
 1. The proper use of hearing protection will prevent many types of hearing loss. You must wear the required hearing protection properly and regularly to reap the benefits of the protection. If you have any problems with the fit of your hearing protectors, contact your supervisor or the EHS Officer / Professional.

Hearing Tests

All employees who are exposed to a noise level of 85 dBA or above will be in the hearing conservation program and have their hearing checked annually by an outside vendor. All hearing test results will be kept with the Environmental Health & Safety (EHS) Officer / Professional.

It is the responsibility of the EHS Officer / Professional to ensure that contractors providing hearing tests to employees meet OSHA requirements. It will be the responsibility of the EHS Officer / Professional to obtain and file the following documentation annually from the contractor providing the hearing tests:

- Current audiometer calibration check records
- Last audiometer check
- Both background noise levels
- Current audiometer technician certification

The EHS Officer / Professional will provide a file for the audiograms that is separate from other medical or personal files. These files will be kept confidential.

How to Properly Wear Hearing Protectors

The EHS Officer / Professional will ensure that proper initial fitting and training is provided in the use and care of all hearing protection provided to FSU faculty and staff.

Hearing protection training is required:

- Annually during Hearing Conservation Training
- Each time an employee shows a Standard Threshold Shift change in hearing

To prevent a hearing loss, hearing protectors must be worn correctly and taken care of. Keep your ear plugs clean by washing them in warm soapy water and be sure they are completely dry before inserting them in your ears. Inspect your hearing protection regularly. If they become damaged, hard, or worn out, replace them with a new pair.

Since everyone has different size ear canals, each person will be fitted by EHS Officer / Professional to ensure they receive the right size protection. Each faculty / staff member will be instructed on how to put their personal hearing protectors in and will also be given the chance to practice in front of the EHS Officer / Professional. Two different types of hearing protectors will be provided to employees. If there is a problem with the fit and comfort of your hearing protectors, your supervisor can provide you with a different type of protection.

Hearing Protection Life Span

The life of hearing protection is dependent upon the care it is given. A sponge type hearing protector is disposable. However, if it is clean, it may be used until it no longer expands. How long the hearing protection lasts is unique to each faculty and staff member depending on the chemical make-up of their body as follows:

Sponge plugs: 1 or 2 days

Custom plugs: 18 – 24 months

Insert plugs: 4 – 6 months

Muffs: Replace when worn out

How to Don Earplugs

- Put your left arm over your head and with your left hand pull up on your right ear.
- With your right hand, insert the ear plug. Switch hands and insert the other plug in the same manner.



Hearing Testing

The two types of hearing tests are annual and baseline hearing tests. The annual hearing testing is required for faculty / staff with 85 dBA TWA or higher noise exposures. Testing can be done any time during the day. Baseline hearing testing is done when a faculty / staff member is initially hired. The baseline is extremely important because it is the reference against which future audiograms are compared to determine the extent to which an employee's hearing is deteriorating. The standard requires that a baseline must be done within six months of hire.

If a mobile van is used, the baseline is required within one year of an employee's first exposure at or above the action level. However, the employee must wear protection for any period exceeding six months until the baseline is obtained. (NC Workers' Compensation Law has a 90 working day grace period. If a company gives the baseline before the grace period is up, then the company may be liable only for subsequent hearing loss.) It is required that the baseline audiogram be preceded by at least 14 hours without exposure to workplace noise. Time that hearing protection is worn may be included as part of the 14 hours without exposure to noise.

All employees will be notified (See Attachment 1) that they need to avoid non-occupational noise exposure during the 14 hours prior the audiometric test. If it is not possible to avoid high noise levels prior to testing, the employee should wear hearing protection prior to the test to minimize the possibility of a temporary threshold shift.

A retest audiogram can be conducted to verify or confirm a standard threshold result. Times when a retest may be needed:

- FSU may obtain a retest within 30 days of the original test and use the results to determine whether a persistent threshold shift has occurred.
- The Audiologist or Physician requests a retest to confirm test results.
- The test administrator requests a new test due to errors in the original test.

Audiometer

If testing is done on site by a contractor, then the following checks must be made:

- Acoustic calibration checks annually per the requirements of Appendix E – Acoustic Calibration of Audiometers of the standard

- Exhaustive calibration checks at least every two years per ANSI S3.6 – 2004 American National Standard Specification for Audiometers
- Pulsed-tone and self-recording audiometers must meet the requirements of Appendix C – Audiometric Measuring Instruments of the standard
- The functional operation of the audiometer must be checked before each day’s use by a person with stable hearing thresholds.

Booth

If testing is done on site by a contractor, then the following checks must be made:

- Noise levels inside the booth must be checked with the ventilation fan on and off each time the booth location or environment changes.
- With no change in the environment or location, it is recommended that the background noise levels be checked every three years.

Standard Threshold Shift

A standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 or more dBA at 2,000, 3,000, and 4,000 Hz. If a standard threshold shift has occurred, the faculty / staff member must be informed in writing within 21 days of the determination (See attachment 2). Employees must be trained in using hearing protectors and in care of the hearing protectors. If the employee is already using hearing protectors, they must be retrained and refitted. If necessary, hearing protectors can be changed to a different type.

Example of a Standard Threshold Shift at 2000, 3000, and 4000 Hz

| COMPANY | | | | PLANT | | | | NAME | | | | | | | | Noise Level (TWA) | | | |
|---------------------|------|----|-----|------------|-----------|------|------|------------|------|--------------|----------|-----|-------|------|------|-------------------|------|------|------|
| ABC Government | | | | Plant 1 | | | | John Brown | | | | | | | | | | | |
| SOCIAL SECURITY NO. | | | | BIRTH DATE | | SEX | | HIRE DATE | | EMPLOYEE NO. | | | | | | | | | |
| 000-01-0000 | | | | 1/12/50 | | M | | 5/7/75 | | | | | | | | | | | |
| TEST NO | DATE | | | EXAM TYPE | RIGHT EAR | | | | | | LEFT EAR | | | | | | | | |
| | YR | MO | DAY | | 500 | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 500 | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | |
| 1 | 77 | 04 | 15 | 0 | 10 | 10 | 35 | 35 | 75 | 85 | NR | 5 | 15/10 | 35 | 45 | 55 | 70 | 85 | 0.85 |
| 2 | 89 | 04 | 01 | 2 | 10 | 15 | 40 | 40 | 80 | 85 | NR | 10 | 5/10 | 45 | 65 | 70 | 75 | 85 | 0.87 |
| 3 | 90 | 04 | 05 | 2 | 5 | 25 | 50 | 45 | 80 | NR | NR | 15 | 15/20 | 55 | 85 | NR | NR | NR | 0.88 |

Recording Hearing Loss on the OSHA 300 Log

Hearing loss meeting the criteria in 29 CFR 1904.10 – Recording Criteria for Cases Involving Occupational Hearing Loss must be recorded on the “Occupational Illness or Injury Form” in the hearing loss column.

Recordkeeping

Records are an important part of any effective hearing conservation program. The information contained in these records reflects the quality and effectiveness of Fayetteville State University's Hearing Conservation Program.

Several documents are required to be maintained under the OSHA hearing conservation standard once the action level has been initiated. Some of these records must be retained for specified periods as shown in the following records and documentation. It is also required that these records be provided, upon request, to employees, former employees, representatives designated by the individual employee, and the assistant secretary of labor.

The **EHS Officer / Professional** will:

- Provide Hearing Conservation training and be responsible for maintaining training records. Records will include names of the individuals trained, type of training, date of training, and name of the trainer.
- Conduct Job Hazard Analyses and be responsible for maintaining records of those analyses. Records include the identity of the workplace or activity evaluated, the name of the person(s) certifying that the evaluation has been performed, and the date(s) of the JHA.
- Maintain the following records/documentation:
 - 1 Noise exposure survey (retain at least two years)
 - 2 Employee notification on the results of the noise exposure survey
 - 3 Posted OSHA hearing conservation standard
 - 4 Hearing testing (retain for at least the duration of employment)
 - a Annual
 - b Baseline
 - 5 Audiogram Evaluation Requirements
 - a Standard threshold shift requirements
 - b Physician review
 - 6 Audiometer
 - a Acoustic calibration check
 - b Exhaustive calibration check
 - c Biological calibration check
 - d Self-listening check
 - 7 Booth (if testing is done on site)
 - a Background noise

Annual Review

The Hearing Conservation Program will be reviewed by the **EHS Officer / Professional**. The annual review will include current training and any documents associated with this program. When new tasks, procedures, and/or positions are added or modified/revised which affect hearing protection, the Hearing Conservation Program will be updated immediately to reflect these changes.



Notification of “Quiet Period” Prior to Baseline Hearing Test

It is an OSHA Noise Standard requirement that you be free from high noise exposure for 14 hours before your baseline test.

You should avoid the following types of noise prior to the hearing test:

Loud work-related activities at work

Lawn mowers

Leaf blowers

Weed trimmers

Chain saws

Power tools

Small engines

Car races

Small airplanes

Power Boats

All firearms

Loud Music

Please wear hearing protection until your baseline hearing test is completed to minimize noise exposure on and off the job.

I have been notified of the need to avoid occupational and non-occupational noise prior to my test.

Employee Signature

Date



Standard Threshold Shift Notification

I have been notified of a Standard Threshold Shift on my last annual hearing test. As a result of my Standard Threshold shift, I was fitted/refitted with _____ hearing protectors and received instructions in the proper way to wear and care for this protector. I understand that the use of this hearing protection is mandatory.

Employee Signature _____

Date _____

I have been through the Hearing Conservation Training Program at Fayetteville State University and I understand that wearing hearing protectors is mandatory in designated areas of the university. In the area where I work, hearing protection is mandatory. I have received my hearing protectors and realized that additional hearing protectors are available with my supervisor. The following topics were included in training:

- a. The effects of noise on hearing.
- b. The purpose of the annual hearing test.
- c. The purpose of wearing protectors and types of hearing protectors available as well as their proper fit and care.

Employee Signature _____

Date _____



Noise Exposure Survey

| SURVEYOR NAME & TITLE | DATE | | TYPE OF SURVEY | | | |
|---|---|-----|--|-----------------------|-------------------------|---------------------------------|
| | | | <input type="checkbox"/> Initial Survey <input type="checkbox"/> Re-Survey <input type="checkbox"/> Other | | | |
| SOUND LEVEL METER | MICROPHONE | | CALIBRATOR | | | |
| Manufacturer: Model: Serial #: | Manufacturer: Model: Serial #: | | Manufacturer: Model: Serial #: | | | |
| LAST ELECTROACOUSTIC CALIBRATION DATE | | | | | | |
| | | | | | | |
| DESCRIPTION OF AREAS/DUTIES WHERE NOISE SURVEY CONDUCTED | | | | | | |
| | | | | | | |
| WIND SCREEN | | | MEASUREMENTS OBTAINED | | | |
| <input type="checkbox"/> Used <input type="checkbox"/> Not Used | | | <input type="checkbox"/> Indoors <input type="checkbox"/> Outdoors | | | |
| MEASUREMENT START TIME | | | MEASUREMENT TIME LENGTH | | | |
| | | | | | | |
| PRIMARY SOURCE OF NOISE | | | SECONDARY SOURCE OF NOISE | | | |
| | | | | | | |
| SOUND LEVEL DATA | | | PROTECTION REQUIRED | | | |
| Location | dBC | dBA | None (<85) | Plug or Muff (85-108) | Plug and Muff (108-118) | Plug & Muff & Time Limit (>118) |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| REMARKS | | | | | | |
| | | | | | | |
| MORE DETAILED NOISE EVALUATION REQUIRED? | | | | | | |
| <input type="checkbox"/> YES <input type="checkbox"/> NO Note: If "YES", identify type of evaluation required. | | | | | | |
| NAME(S) OF PERSON(S) IDENTIFIED FOR AUDIOMETRIC MONITORING | | | | | | |
| | | | | | | |
| SUPERVISOR OF NOISE-HAZARDOUS AREA OR OPERATION | | | | | | |
| | | | | | | |